

## ABSTRACT

A method for rapidly increasing the photosensitivity of an optical fiber comprising the step of providing an optical fiber comprising a glassy material and a thermally-stable coating. The thermally-stable coating has a thermally-stable exposure band, wherein  
5 desired time/temperature exposure parameters fall within the time/temperature thermal stability exposure band for the coating. The optical fiber is exposed for the desired time/temperature exposure to a hydrogen-containing atmosphere. The desired temperature is more than 250°C and the desired time exposure does not exceed one hour. The glassy material then may be irradiated with actinic radiation, such that the refractive  
10 index of the irradiated portion results in a normalized index change of at least  $10^{-5}$ .